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ABSTRACT

Do success-oriented and failure-avoidant students differ in their performance because of differential attributions? Path analysis, which permits the evaluation of causal assumptions in well-specified theories, was employed to test the adequacy of the causal linkages in the attributional model of achievement behavior. Thus, although differences in attributions exist, they are not causally important. (Author)

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IS THERE CAUSALITY IN CAUSAL ATTRIBUTIONS? *

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Over the last few years attribution theory has led us to a cognitive reinterpretation of the traditional theory of achievement motivation. Weiner's model of achievement behavior (1972, 1974) posits that the different attribution patterns of success-oriented and failure-avoidant students mediate affective reactions, expectancy changes, and subsequent performance. Accordingly, attributing failure to a lack of effort -- a cognition typical of success-oriented students -- leads to increased shame, inhibits expectancy decrements, and subsequently causes improved performance. On the other hand, attributing failure to a lack of ability -- a cognition typical of failure-avoidant students -- results in lowered expectancy, reduced shame, and ultimately decreased performance. Thus, achievement motivation is seen as an antecedent condition which determines specific mediating cognitions about the causes of performance. An achievement outcome elicits typical patterns of attributions to ability, effort, task difficulty, and/or luck; and these, in turn, determine affect and expectancy changes, which lead to subsequent performance.

Although much research has contributed to the development of this theoretical model, little attention has been given the central assumption of causality. Most investigators have concerned themselves with one aspect or linkage of the model and none of the previous research has addressed the causal determinants specified in the total model. As a result, often the interpretation of effects has been

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ad hoc, and, as a consequence, not always persuasive. Noting that attributions are related to achievement motivation, on the one hand, and to shame, expectancy, and performance, on the other, may properly label the phenomena, but does not explain the dynamic underlying the process. Thus the important question becomes, "Do the two achievement types differ in affective reactions, expectancy, and performance because of the causal attributions they make for an earlier outcome?" To confirm Weiner's model, attributions must vary with achievement motivation as well as predict affective reactions, expectancy, and ultimately performance. If this model is correct, the major influence of achievement motivation should be transmitted via attributions, through affect and expectancy, to performance. In short, the purpose of this study was to examine the causality in causal attributions.

Subjects (N=206) were students in a large undergraduate psychology course at the University of California at Berkeley, who felt they had failed on a multiple-choice exam and chose to take the exam another time using a parallel form. After feedback regarding their performance on the first trial, they made attributions for their failure to the four causal elements, indicated degree of shame, and stated their expectancy of success on the second trial. Measures of Resultant Achievement Motivation were derived from the difference between Z scores on the Mehrabian Achievement Risk Preference Scale (MARPS) (Mehrabian, 1958, 1959) and Z scores on the debilitating anxiety subscale of the Achievement Anxiety Test (AAT) (Alpert and Haber, 1960). Path analysis, which permits the evaluation of causal assumptions in well-specified theories, was employed in this study to test the adequacy of the causal linkages in the model. The four attributions, shame, expectany, and second trial performance served, in turn, as the dependent variables in this path analysis.

RESULTS AND DISCUSSION

As predicted by the attributional model, our correlational data indicate that success-oriented and failure-avoidant students made differential attributions for their failures, experienced different amounts of shame, expressed varying expectancies for the next trial, and, in fact, did perform differently on the second trial. Results of the path analysis, however, offered only partial support for the model's assumptions about the causal role of attributions. Let us turn to this path analysis (Figure 1) as we briefly discuss each of the causal linkages in the model.

Achievement Motivation--Attribution Linkage: Weiner's cognitive model postulates that individuals high in achievement needs attribute failure to a lack of effort; whereas, individuals low in achievement needs ascribe failure to a lack of ability. As expected, our data show that failure-avoidance leads to more heavy reliance on causal explanations stressing a lack of ability. However, success-orientation does not appear to cause more frequent ascriptions to inadequate effort. Although achievement needs do account for 12% of the variation in ability attributions, they play a minor role in determining effort, luck and task difficulty attributions. It would appear, then, that such modest relationships do not strongly recommend attributions as causally important mediating factors in the achievement dynamic. But before we prejudge their role, let us move to the next stage in the model.

Attribution--Affect Linkage: The attributional model holds that affect is primarily determined by attributions to internal factors. In other words, affect is maximized when failure is attributed to the internal elements of ability and effort. The results of our path analysis are entirely consistent with this

prediction. Attributions to the internal elements of effort and ability contributed directly to the degree of shame experienced after failure; whereas, failure that was perceived as due to the external elements of task difficulty or bad luck produced little variation in negative affect.

It is further predicted by the model, however, that among the internal elements, causal ascriptions to insufficient effort produce greater shame than attributions to inadequate ability. The results of this investigation were contrary to this prediction. In fact, consistent with Self-Worth Theory (Covington and Beery, 1976), attributions to low ability increased shame, whereas insufficient effort served to mitigate the negative consequences of failure. Students, indeed, appear to be more devastated by a failure reflecting on their ability than one following minimal effort.

A basic premise of Weiner's model is that need Achievement is an attributional disposition; that is, the differential attributional patterns of the two types of students mediate their affective reactions. It is held that success-oriented individuals experience more shame because they attribute their failure to a lack of effort; while failure-avoidant types avoid shame because of attributions to low ability. This assumption of the mediating effect of causal cognitions is central to the model proposed by Weiner. The important question thus becomes, "Do success-oriented and failure-avoidant students experience different degrees of shame <u>because</u> of the attributions they make for their failures?" As can be seen in Table 1, our data indicate that differences in experienced shame do exist, but in the opposite direction of prediction. Failure-avoidant types experienced more (not less) negative affect than success-oriented types. This difference was primarily due to their motive orientation, which accounted for over two-thirds (70%) of the explained variance in shame. The other 30% was mediated by the tendency to attribute failure to insufficient

ability, which in turn led to more negative affect. It appears, then, that internal attributions are important in mediating failure-avoidant students' greater affective reactions to failure, but that attributions to inadequate ability, and not insufficient effort, produce increased shame.

Attribution--Expectancy Linkage: Concerning the expectancy linkage, the attributional model postulates that expectancy is determined by ascription to stable, as opposed to unstable, elements. More specifically, after failure, attributions to ability or task difficulty decrease expectancy of success to a greater extent than do attributions to effort or luck. The results of our analysis provided only partial support of these predictions. If we look at the direct linkages between attributions and expectancy (Figure 1), we see that high attributions to the stable elements of insufficient ability or a difficult task did tend to decrease expectancy as predicted. But then again, a high attribution to low effort (an unstable element) also decreased expectancy. Only attributions to bad luck served to inhibit expectancy decrements.

The attributional model further postulates that the varying expectancies of success-oriented and failure-avoidant students are mediated by their differential attributions along the stable/unstable dimension. Accordingly, success-oriented students should have higher expectancies because of their attributions to insufficient effort; whereas failure-avoidant types, relying as they do on, inability attributions, should lower their expectancy. Thus we might ask, "Do success-oriented and failure-avoidant students exhibit differing expectancies because of the attributions they make for their previous performance?" Again refering to Table 1, we see that the clearest result in our analysis is that the most powerful determinant of expectancy was the direct influence of motive orientation. Although failure-avoidant students more often attributed failure to lack of ability, which tended to lead to expectancy decrements, they also

relied on luck attributions which enhanced hopes of success. These two attributional tendencies appear to cancel out any mediating effects of causal cognitions. The two types of students differ in their hopes of success because of their motive disposition, not because of the attributions they make for previous performance. The mediated effect via attributions adds little to our understanding of why students express different expectancies.

Causal Attribution--Performance Linkage: Finally we come to the last stage in this analysis of the attributional model. According to the model, the differential attributions of success-oriented and failure-avoidant students modify expectancy and affect, and these, in turn, influence achievement behaviors. Consequently, it is argued that attributions play an important mediating role in determining achievement behavior, including achievement quality. Accordingly, we can ask, "Do the two types of students differ in subsequent performance because of the causal attributions they make for a previous failure?" As can be seen on our path diagram and in Table 1, differences in attributions did not causally contribute either directly or indirectly to subsequent performance; that is, success-oriented and failure-avoidant students did not differ in second trial performance because of the attributions they made for their failure on the first trial. When we decomposed the original correlation between achievement motivation and performance ($r = .15$, $p < .05$) into direct and indirect causal paths (Table 1), 60% of the explained variation in performance was accounted for by the direct path from achievement motivation alone. Over half of the remaining variance was mediated by expectancy; that is, success-oriented students held higher expectancies, which in turn lead to better performance. In addition, analysis of variance indicated that of all the predictors in the model only achievement motive, expectancy, and shame contributed significantly to variations in performance. When we deleted causal attributions from

the path analysis model, we found that the old standbys, M_S, P_S, and I_S, accounted for 14.8% of the variation in performance. In contrast, the full model, including the mediating effect of attributions, accounted for 15.3% of this same variation -- a difference of only one half of one percent! Clearly, knowledge of how students explain their failures tells us little about how they will subsequently perform.

In summary, results of our path analysis offer little support for the model's assumptions of causation. Success-oriented and failure-avoidant students did not differ in subsequent performance because of the attributions they made for their failure. Attributions did, in part, contribute to differential expectancy and shame, but not always in the manner prescribed by the model. In any event, little support was found for the mediating effects of attributions on achievement behavior. The addition of attributions to the traditional achievement motivation model adds little to our understanding of student performance.

Thus, although differences in attributions exist, they are not causally important. What role, if any, do causal attributions play in the achievement dynamic? Perhaps this question can best be answered by another question -- "What are attributions?" On one level, they may be reactions to, and not causes of, achievement performance. On another level, they may be rational cognitions governed by principles of balance or cognitive consistency. On yet another level, they may be ego-defensive or ego-enhancing. If attributions are not truthful reactions, but defensive maneuvers to protect a sense of competency, then their causal importance in the achievement dynamic may be obscured. We would not argue that perceptions of ability and effort are unimportant in achievement behavior. To the contrary, we would strongly agree that ability and effort (or "can" and "try" in Heider's terms) are centrally important to this dynamic. We do argue, however, that perhaps the importance of their role

has been obscured becaused these causal attributions were made when the need for defensiveness was most salient -- after a failure! In any event, we have come full circle if we accept the potentially affective component of cognitive attributions. Indeed, what we must accept is the complexity and richness of the problem of understanding the achievement dynamic.

These considerations lead us to propose an alternate model of achievement behavior which focuses on the "dynamic of expectation". Clearly, our path analysis demonstrated that the major determinant of performance is expectancy. Since expectancy, or probability of success, is of such crucial importance in determining performance, research in this area might benefit from focusing on this expectancy dynamic. Of course, the similarity of this conceptualization to Heider's constructs is obvious. Few of us would argue with his formulation of expectancy as a joint function of "can" and "try". Thus ability and effort become important not as causal attributions, but as self-perceptions as the student approaches the achievement situation. In such a conceptualization, attributions become reactions to expectancies, which are determined primarily by levels of perceived competence and expended effort. Some of our more recent investigations in Self-Worth Theory support these contentions. The primary determinants of attributions as well as affect, expectancy, and ultimately performance are self-perceptions of competence and effort expenditure. Thus, causal explanations may not be causes of affect, expectancy and performance; but, instead share with them in being reactions to self-perceptions of "power" vis a vis the achievement situation.

Figure 1

Path Diagram showing the Effect of Achievement Motivation, Causal Attributions, Expectancy and Shame on Subsequent Performance following Failure #

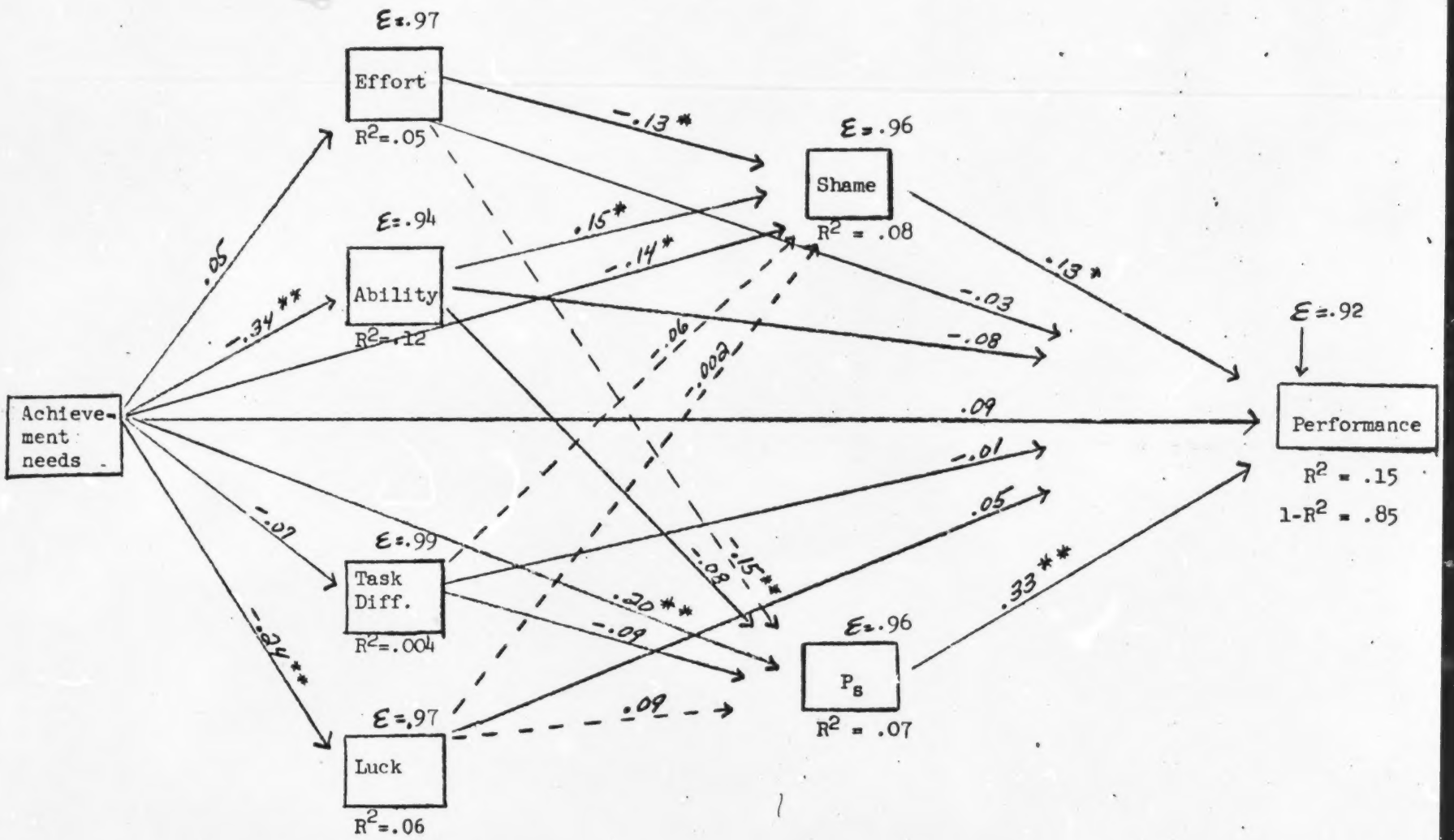

TABLE 1

Decomposition of Zero-Order Correlations
of Achievement Motivation with
Shame, Expectancy and Performance

	Shame	Expectancy	Performance	
Zero-Order Correlation	-.19**	.21**	.15**	
Direct Effect	-.14*	.20**	.09	
Indirect Effect Through:				
Effort	-.007	-.001	-.002	
Ability	-.051	.027	.027	.014
Task Difficulty	.004	.006	.001	
Luck	.000	-.022	-.012	
Stable (TD,A)	---	.033	---	
Unstable (E,L)	---	-.023	---	
Internal (A,E)	-.058	---	---	
External (TD,L)	.004	---	---	
Shame	---	---	-.018	
Expectancy	---	---	.066	
Attributions and Shame	---	---	-.007	
Attributions and Expectancy	---	---	.002	
Total Indirect Effect	-.05	.01	.06	
Total Causal Effect	-.19	.21	.15	

*$p < .10$
**$p < .05$